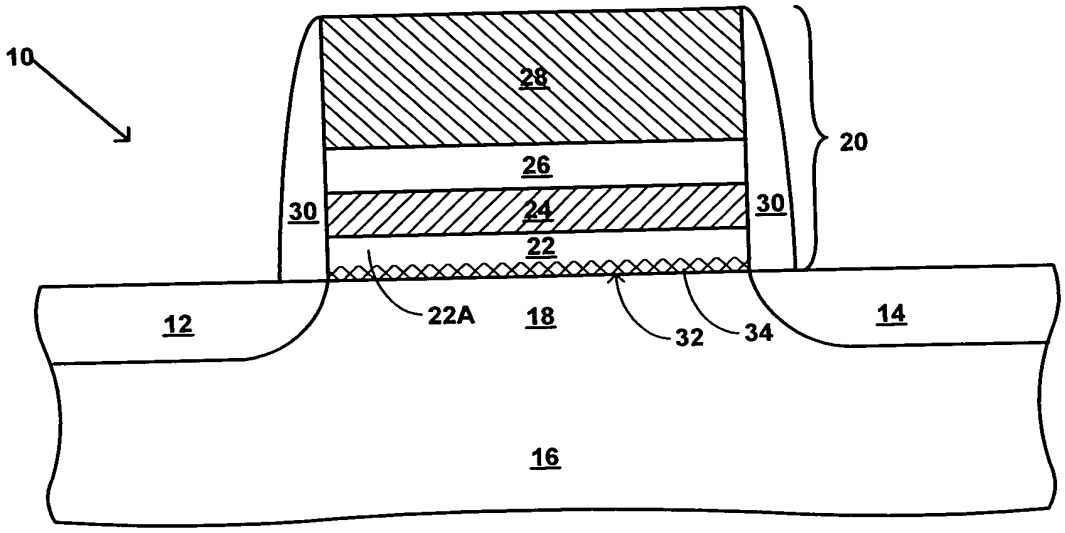


Fig. 1

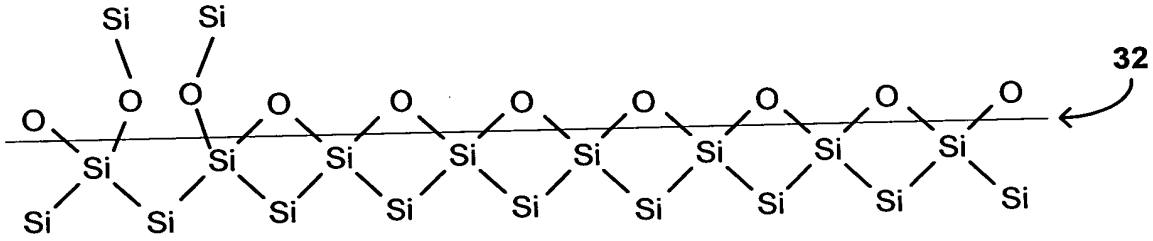
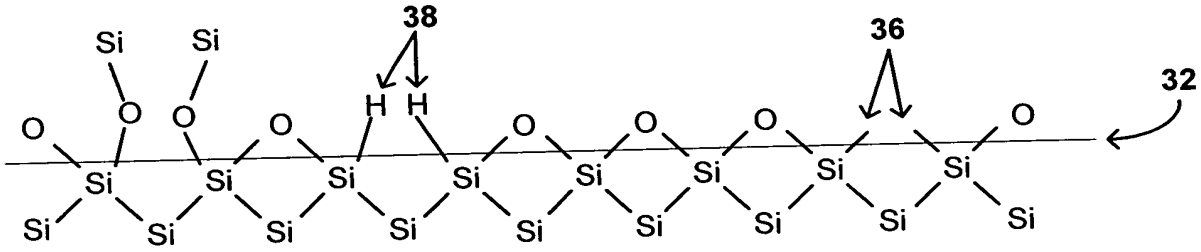


Fig. 2



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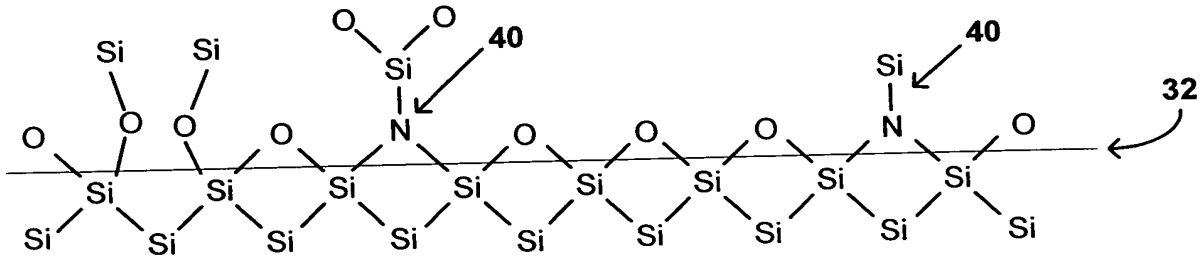
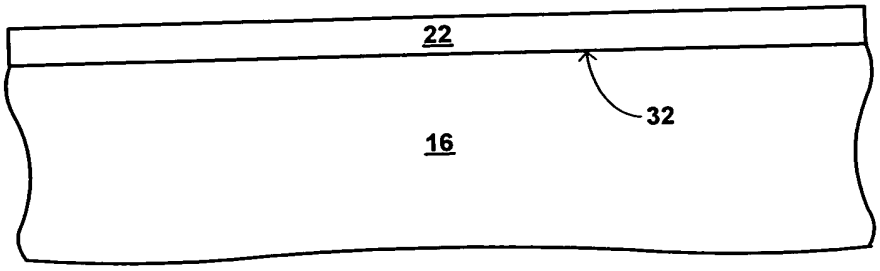


Fig. 4



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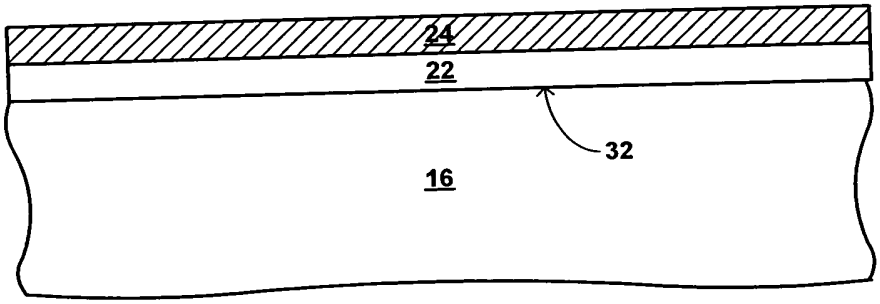

Fig. 6

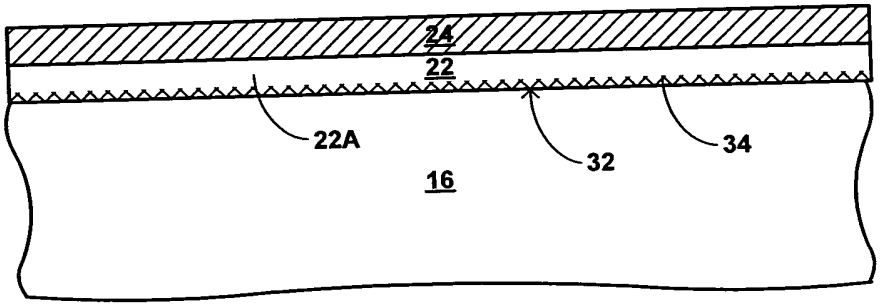

Fig. 7

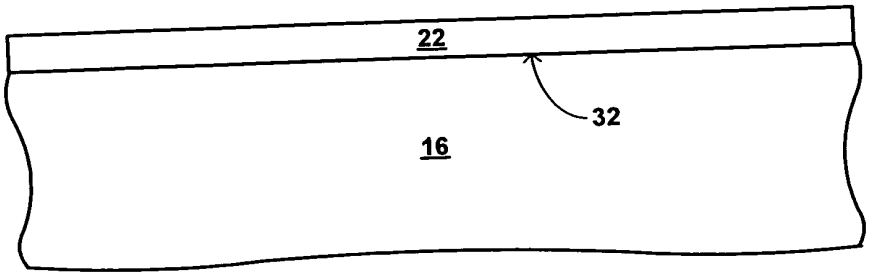

Fig. 8

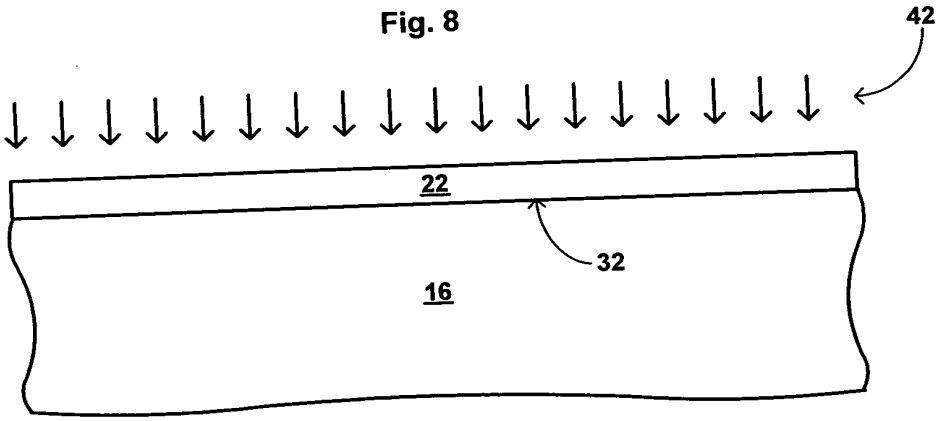

Fig. 9

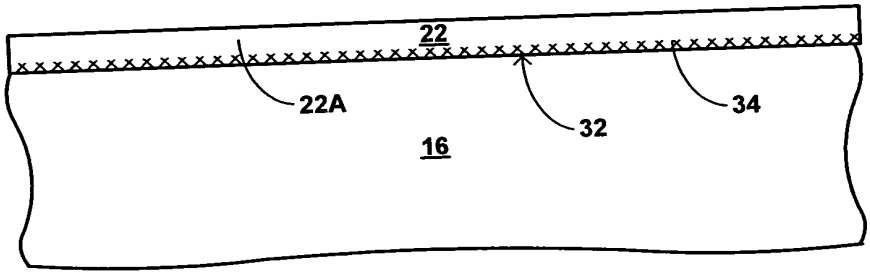

Fig. 10

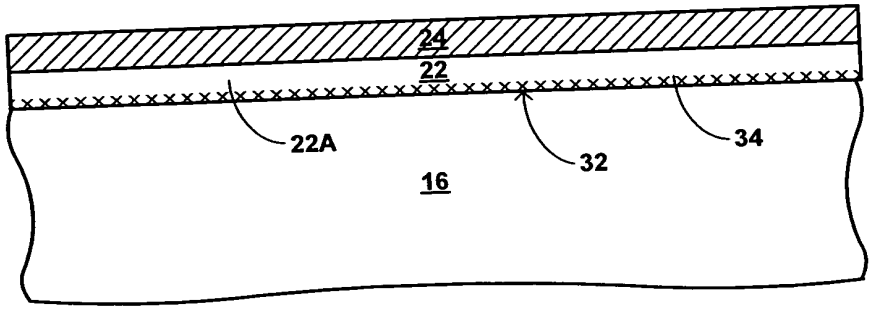

Fig. 11

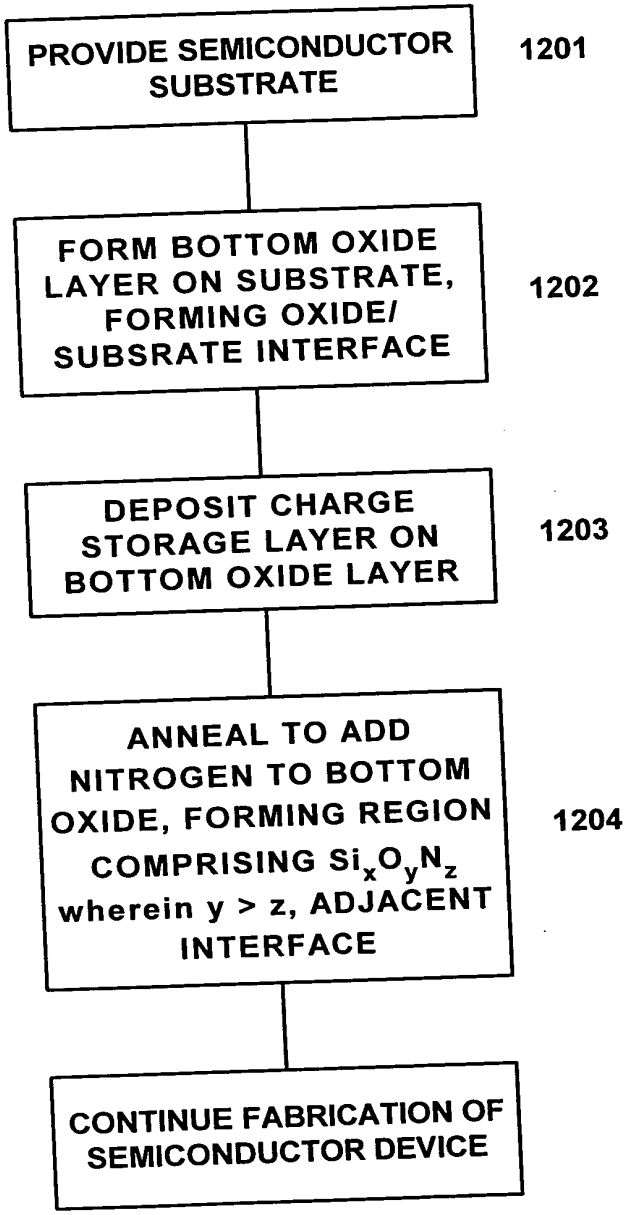
PROVIDE SEMICONDUCTOR SUBSTRATE
1201
FORM BOTTOM OXIDE LAYER ON SUBSTRATE, FORMING OXIDE/ SUBSRATE INTERFACE
1202
DEPOSIT CHARGE STORAGE LAYER ON BOTTOM OXIDE LAYER
1203
ANNEAL TO ADD NITROGEN TO BOTTOM OXIDE, FORMING REGION COMPRISING $Si_xO_yN_z$ wherein y > z, ADJACENT INTERFACE
1204
CONTINUE FABRICATION OF SEMICONDUCTOR DEVICE

Fig. 12

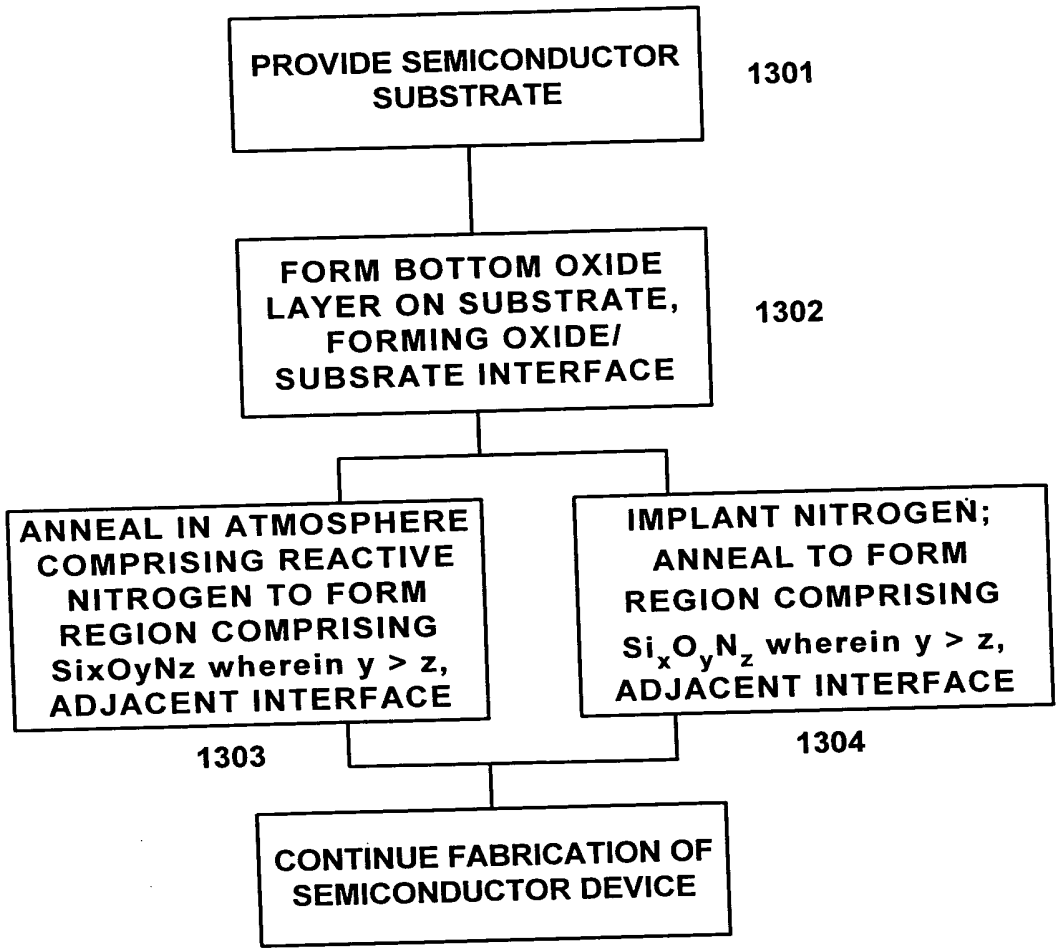
PROVIDE SEMICONDUCTOR SUBSTRATE
1301
FORM BOTTOM OXIDE LAYER ON SUBSTRATE, FORMING OXIDE/ SUBSRATE INTERFACE
1302
ANNEAL IN ATMOSPHERE COMPRISING REACTIVE NITROGEN TO FORM REGION COMPRISING SixOyNz wherein y > z, ADJACENT INTERFACE
1303
IMPLANT NITROGEN; ANNEAL TO FORM REGION COMPRISING $Si_xO_yN_z$ wherein y > z, ADJACENT INTERFACE
1304
CONTINUE FABRICATION OF SEMICONDUCTOR DEVICE

Fig. 13